



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,461	08/20/2003	Larry Rodney Eaton	12-0999	5931

27160 7590 12/13/2004

PATENT ADMINSTRATOR
KATTEN MUCHIN ZAVIS ROSENMAN
525 WEST MONROE STREET
SUITE 1600
CHICAGO, IL 60661-3693

EXAMINER

CHANG, DANIEL D

ART UNIT	PAPER NUMBER
----------	--------------

2819

DATE MAILED: 12/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/644,461

Applicant(s)

EATON ET AL.

Examiner

Daniel D. Chang

Art Unit

2819

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-12 is/are allowed.
- 6) ☒ Claim(s) 1-4, 13-16, 18 and 20 is/are rejected.
- 7) ☒ Claim(s) 17 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/20/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Drawings

Figure 8 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 13 is objected to because of the following typographical error: on line 3, "said node" appears to be --a node--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 13-16, and 18 rejected under 35 U.S.C. 102(b) as being anticipated by Herr (US 6,154,044).

Art Unit: 2819

Regarding claim 1, Herr discloses, at least in Fig. 1A, a current regulator for a superconducting logic device adapted to be powered by an external power supply (20; col. 6, lines 3+), the current regulator comprising:

- a non hysteretic Josephson junction (22, 18) coupled between said external power supply and a node (38);

- a hysteretic Josephson junction (32) coupled between said node and ground; and

- a biasing resistor (40) coupled on one end to said node and adapted to be connected on the other end to said superconducting logic device (156 in Fig. 4).

Regarding claim 2, Herr discloses, at least in Fig. 1A, that said non hysteretic junction includes a hysteretic Josephson junction (18) coupled in parallel with a resistor (22) forming a resistively shunted junction (RSJ).

Regarding claim 3, Herr discloses, at least in Fig. 1A, that said non-hysteretic junction is a self shunting junction (see 22 and 18).

Regarding claim 13, Herr discloses, at least in Fig. 1A, a current regulator for a superconducting logic device adapted to be powered by an external power supply (20; col. 6, lines 3+), the current regulator comprising:

- a non hysteretic junction (22, 18) coupled between said external power supply and a node (output of 16); and

- a damping impedance (16 of next stage, or 14, or 40) coupled between said node and said superconducting logic device (16, 14, or 156 in Fig. 4).

Art Unit: 2819

Regarding claim 14, Herr discloses, at least in Fig. 1A, that said non-hysteretic junction includes a hysteretic Josephson junction (18) coupled in parallel to a resistor (22) forming a resistively shunted junction (RSJ).

Regarding claim 15, Herr discloses, at least in Fig. 1A, that said non-hysteretic junction is a self-shunting junction (see 22 and 18).

Regarding claim 16, Herr discloses, at least in Fig. 1A, that said damping impedance includes a series inductance (34).

Regarding claim 18, Herr discloses, at least in Fig. 1A, that said damping impedance includes a resistance (36).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herr.

The teachings of Herr have been discussed above.

Herr discloses a resistor but does not disclose that the resistor is a thin film resistor.

However, it is well known in the art that the thin film resistor provides less physical areas on superconducting devices. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to substitute the resistor of Herr with thin film resistor in order to reduce the physical size of the superconducting devices.

Allowable Subject Matter

Claims 5-12 are allowable over the prior art.

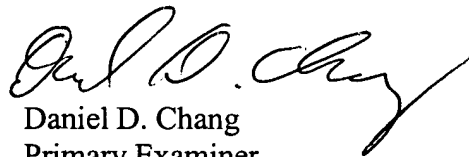
Claims 17 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel D. Chang whose telephone number is (571) 272-1801. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael J. Tokar can be reached on (571) 272-1812. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel D. Chang
Primary Examiner
Art Unit 2819

**DANIEL CHANG
PRIMARY EXAMINER**